

SEQUENCE LISTING

<110> Joelle Thonnard

<120> Novel Compounds

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<151> 1999-09-30

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<212> DNA

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5019

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<212> PRT
<213> Moraxella catarrhalis

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Gly Ala Ile Ile Ala Ala Leu Leu Leu Ala Val Leu Phe Ala Met
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Thr Asn Ser Glu Ser Gly Ser Lys Phe Leu Ile Glu Lys Ile Ala Leu
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Glu Thr Gly Thr Lys Leu Lys Tyr Ser Glu Gly Ser Ile Arg His Gly
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Val Trp Val Gln Asp Val Lys Ile Ala Gln Ser Glu Asp Ile Thr Ile
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Thr Ile Asn Arg Ala Tyr Val Gln Leu Gly Trp Arg Ala Leu Phe Ala
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Arg Gln Val His Leu Val Asn Pro Lys Ile Asp Lys Val Tyr Val Thr
130 135 140
Asn Thr Lys Pro Ser Thr Gly Glu Pro Phe Asp Tyr Ala Thr Ile Asn
145 150 155 160
Leu Pro Val Thr Leu Lys Leu Glu Asn Ala Lys Val Asn Glu Ile Ile
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Tyr Asp Gln Val Asp Ser Glu Pro Val Val Leu His His Ile Ala Phe
180 185 190
Asp His Ala Ser Trp Ala Asp Ser Thr Val Lys Ile Asp Asn Ala Met
195 200 205
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210 215 220
Asp Leu Thr Gly His Tyr Pro Leu Ser Leu Ser Ala Asp Val His Ile
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245 250 255
Gly Ser Leu Lys Arg Thr Val Gly Thr Leu Thr Gly Lys Tyr Asn Gln
260 265 270
His His Val Thr Gly Ser Phe Ile Ala Gln Gly Leu Asp Lys Asn Ser
275 280 285
Pro Phe Ser Ala Arg Leu Asp Phe Asp Glu Val Arg Leu Pro Tyr Ala
290 295 300
Asp Ser Gln Asn Ile Leu Leu Lys Asn Gly Ser Ile Ile Ala Asp Gly
305 310 315 320
Val Ile Ser Asn Ile Glu Leu Arg Ile Asn Thr Glu Leu Ser Ala Lys
325 330 335
Asp Ile Pro Asp Gly His Tyr His Gly Arg Gly Ile Ile Arg Gly Ser
340 345 350

Thr Met Gln Ile Pro Tyr Leu Gln Ala Asp Thr Ala Asn Gly Thr Leu
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Val Ala Thr Gly Asp Met Thr Trp Glu Asp Gly Tyr Glu Leu Asp Ala
370 375 380
Thr Ile Thr Ala Asp Gly Tyr Arg Ile Arg Glu Glu Met Pro Ser Asp
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Tyr His Glu Tyr Arg Ala Tyr Leu Pro Lys Val Leu Thr Gly Ser Leu
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Gly Val Lys Tyr Thr Leu Leu Asp Lys Ala Ser His Asp Thr Arg Phe
420 425 430
Glu Phe Asp Leu Asn Gln Lys Asp Gly Glu Arg Ile Gln Ala Thr Leu
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Ala Gln Asn Gln Gln Ser Asp His Glu Pro Trp Arg Ile Asp Ala Thr
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Trp Ala Asn Leu Ile Arg His Asp Ile Pro Gln Ile Gly Glu Ile His
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Ser Arg Ser Gly Gln Ala Ser Val Arg Leu Glu Asn Gly His Thr Tyr
485 490 495
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Ser Tyr His Val Gln Ala Asn Ile Glu Gln Asn Gln His Leu His Leu
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Thr Asp Phe Asn Tyr Gln Gly Val Met Gly Glu Leu Thr Gly Thr Gly
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Arg Val Asp Phe Ala Thr Ala Gln Arg Pro Leu Glu Trp Gln Leu Asp
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Val Thr Ala Asn Pro Val Lys Pro Asn Ala Tyr Phe Gln Thr Pro Asn
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Gln Thr Pro Phe Glu Gln Ile Ser Gly Arg Ile Ile Ala Ser Gly Arg
580 585 590
Leu Arg Glu Ile Asp Gly Val Ser Ile His Asp Ile Lys Val Asp Asp
595 600 605
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Leu Lys Ala Asn Phe Asp Gly Lys Leu Ala Gln Asp Ile Leu Pro Gln
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740 745 750
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755 760 765
Gly Asn Arg Phe Met Val Asn His Leu Arg His Asp Gly Thr Ala Gly
770 775 780

Thr Leu Asn Ala Thr Gly Trp Val Asp Ile Ser Gln Gly Ala Ala Trp
785 790 795 800
Gln Leu Glu Ala Asp Met Asn Ser Leu Asn Leu Gly Ala Phe Ile Gln
805 810 815
Ser Leu Asp Thr Asp Leu Asn Gly Thr Ile Gln Leu Ala Gly Asn Trp
820 825 830
Gln Glu Ser His Gln Val Ile Asp Ile Ser Asn Leu Asp Ile Thr Gly
835 840 845
Ser Tyr Asn Asn Gln Pro Leu Ile Ala Thr Gly Ser Leu Tyr Ala Lys
850 855 860
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865 870 875 880
Ala Ser Arg Pro Pro Thr Ser Ser Asp Asp Leu Leu Ala Leu Lys Asn
885 890 895
Arg Ile Asp Asn Asn Ala Arg Gln Thr Gln Asn Ile Val His Lys Leu
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Val Ser Ser Leu Arg Phe Ala Asn Ile Thr Ile Gln Asn Ala Gln Ala
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Ile Gly Lys Ile Val Asn Leu Gly Asn Ser Glu Ser Gln Leu Leu Val
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Gln Gly Asp Asp Ile Ile Val Met Gly Arg Thr Ile Lys Ser Ala Arg
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Met Asp Phe Ser Gly Thr Glu Ala Asp His Ile Leu Ser Ile Ser Thr
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Lys Ser Gly Asp Ile Glu Ala Ser Met His Ile Asp Gly Ala Phe Asn
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Gly Arg Ile Ser Glu Ser Ser Asp Leu Gly Ile Thr Glu Gln Gly Phe
1555 1560 1565
Arg Ser Gln Val Thr Asn His Leu Ala Ala Ala Gly Leu Ser Leu Gly
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<212> DNA
<213> *Moraxella catarrhalis*

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<211> 992

<212> PRT

<213> *Moraxella catarrhalis*

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Leu Thr Phe Asp Gly Gln Val Ile Asn Asn Ser Ile Pro Asn Gly His			
65	70	75	80
Leu Ser Ile Asp Ala Thr Gly Ser Gly Asn Arg Phe Met Val Asn His			
85	90	95	
Leu Arg His Asp Gly Thr Ala Gly Thr Leu Asn Ala Thr Gly Trp Val			
100	105	110	
Asp Ile Ser Gln Gly Ala Ala Trp Gln Leu Glu Ala Asp Met Asn Ser			
115	120	125	
Leu Asn Leu Gly Ala Phe Ile Gln Ser Leu Asp Thr Asp Leu Asn Gly			
130	135	140	
Thr Ile Gln Leu Ala Gly Asn Trp Gln Glu Ser His Gln Val Ile Asp			
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Ile Ser Asn Leu Asp Ile Thr Gly Ser Tyr Asn Asn Gln Pro Leu Ile			
165	170	175	
Ala Thr Gly Ser Leu Tyr Ala Lys Leu Ser Leu Pro Lys Asp Leu Ala			
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Gly Tyr Ile Gin Ser Ile Lys Gln Ala Ser Arg Pro Pro Thr Ser Ser			
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Thr Gln Asn Ile Val His Lys Leu Asn Ala Asp Asn Leu Gln Val Arg			
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Ile Gly Asn Asn His Leu Ala Ile Ser Gly Asp Glu Arg Gln Leu Thr			
245	250	255	
Ala Ser Val Asn Val Ile Asp Leu Gly Gln Leu Ile Asp Thr Ala Ser			
260	265	270	
Gly Ala Ile Gln Gly Gly Val Ile Val Val Asn Asp His His Ala Leu			
275	280	285	
Pro Thr Leu Tyr Ile Asp Ala Ser Val Ser Ser Leu Arg Phe Ala Asn			
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Ile Thr Ile Gln Asn Ala Gln Ala Ile Gly Lys Ile Val Asn Leu Gly			
305	310	315	320

Asn Ser Glu Ser Gln Leu Leu Val Gln Gly Asp Asp Ile Ile Val Met
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340 345 350
Asp His Ile Leu Ser Ile Ser Thr Lys Ser Gly Asp Ile Glu Ala Ser
355 360 365
Met His Ile Asp Gly Ala Phe Asn Arg Asn Asn Met Arg Tyr His Gly
370 375 380
Val Leu Ser Asp Gly Phe Val Lys Ser Gly Phe Gly Lys Met Ser Gln
385 390 395 400
Arg Gln Pro Thr Glu Phe Ser Tyr Gly Leu Asp Asp Asn Ser Leu Gln
405 410 415
Ile Ala Ala His Cys Trp Gln Ser Ala His Ile Gln Gly Asp Gly Val
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Gly Ala Ile Cys Leu Gln Asp Thr Leu Ser Tyr Thr Pro Gln Ser Gly
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Asn Val Asn Leu Ile Ile Gln Asn Leu Asp Thr Gln Val Leu Leu Ala
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Ala Leu Pro Ser Asp Ile His Trp Lys Ser Met Leu Asn Gly Arg Ile
465 470 475 480
Lys Ala Met Trp Gln Ala Gly Gln Ser Pro Leu Val Asp Ala Val Leu
485 490 495
Tyr Ser Asp Asp Gly Thr Ile Gly Leu Thr Gln Glu Glu Thr Gly Tyr
500 505 510
Ile Glu Met Pro Tyr Gln Arg Ala Ser Val Ile Ala Lys Ser Val Asp
515 520 525
Asn Gly Leu Lys Val Arg Thr Asp Ile Leu Gly Thr Ala Gly Arg Gly
530 535 540
Tyr Ala Asp Val Ile Ile Asn Pro Lys Gln Thr Asp Lys Pro Ile Ser
545 550 555 560
Gly Ala Leu Val Met Asn Asp Leu Asn Leu Ala Val Leu Arg Pro Phe
565 570 575
Phe Pro Ser Ile Gln Thr Leu Ser Gly Lys Val Ser Leu Ala Gly Gly
580 585 590
Leu Gly Gly Thr Leu Ser Lys Pro Leu Phe Tyr Gly Asn Ala Asn Leu
595 600 605
Lys Asn Gly Ala Leu Ala Ile Val Gly Val Pro Met Pro Ile Ser Asp
610 615 620
Val Asp Ala Thr Val Asn Ile Arg Gly Thr Lys Ala Arg Leu Asp Gly
625 630 635 640
Arg Phe Met Gly Gly Glu Gly His Gly Val Leu Tyr Gly Glu Met Asp
645 650 655
Trp Ala Glu Glu Leu Tyr Ala Arg Leu Gly Val Phe Gly Glu Asn Leu
660 665 670
Thr Val Ser Gln Pro Pro Leu Val Thr Ala Gln Ile Ser Pro Glu Leu
675 680 685
Glu Val Ile Ile Arg Pro Phe Gln Lys Phe Val Asp Val Gln Gly Val
690 695 700
Val Ser Ile Pro Ser Ala Thr Ile Arg Pro Pro Glu Ala Thr Ala Asp
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725 730 735
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770 775 780
Gln Gly Ala Met Gln Ala Leu Gly Val Val Gln Val Ser Lys Arg Thr
785 790 795 800
Lys Ile Asp Val Ile Gly Gln Asn Leu Asp Leu Asn Tyr Ala Gln Ile
805 810 815
Arg Phe Asp Gly Asp Met Leu Asn Pro Arg Leu Ser Ile Glu Gly Glu
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Lys Gln Ile Glu Gly Gln Thr Val Gly Val Arg Ile Arg Gly Thr Ala
835 840 845
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Gln Ala Met Asn Ala Leu Val Thr Gly Arg Ile Ser Glu Ser Ser Asp
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Leu Gly Ile Thr Glu Gln Gly Phe Arg Ser Gln Val Thr Asn His Leu
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Ala Ala Ala Gly Leu Ser Leu Gly Leu Ser Gly Thr Arg Asp Leu Thr
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Pro Asp Leu Tyr Leu Arg Tyr Gly Val Gly Val Phe Asn Ala Glu Ser
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